

WHAT IS CLAIMED IS:

1. A digital printing apparatus for printing on objects, comprising:

a moveable blanket carrier having an exterior on which a printing blanket is disposed, the printing blanket having a plurality of blanket sections along the exterior of the carrier, with each blanket section being so placed along the carrier and being of such length as to transfer ink on the blanket section to a respective object to be printed which moves in contact with the respective blanket section;

at least one digitally controlled print head operative to print at least a single color in at least a single pattern and the print head is directed so as to provide non-contact printing of a blanket section moved past the print head by the blanket carrier;

an object transport device for transporting objects to be printed by contact with respective blanket sections of the blanket carrier after the print head has printed the blanket section, the transport device including a plurality of supports for the objects to be printed, the supports being spaced apart on the transport device, the transport device being so shaped and being so positioned with respect to the blanket carrier as to move each object supported thereon in turn past a respective blanket section and in contact with the blanket sections sufficiently for enabling transfer of an ink image on the respective blanket section to the respective object then in contact with the blanket section, the transport device then transporting each object printed by a respective blanket section away from the blanket carrier for further processing.

2. The printing apparatus of claim 1, wherein the carrier comprises a blanket cylinder and the movement of the carrier comprises rotation thereof.

3. The printing apparatus of claim 2, further comprising a plurality of the digitally controlled print heads spaced apart along the carrier and respectively positioned and aimed at the blanket cylinder, so that the plurality of print heads are operable to print a plurality of the blanket sections, as a blanket section to be printed by a respective print head passes the respective print head.

4. The printing apparatus of claim 3, further comprising a computer control connected with the print heads and with the blanket carrier for sensing the position of the blanket carrier and the blanket sections thereon and for selectively operating each print head to print the blanket section then passing the print head.

5. The printing apparatus of claim 3, further comprising a varnishing device positioned after the contact between the objects being printed and the blanket cylinder for varnishing the objects after printing.

6. The printing apparatus of claim 5, further comprising a transfer device for transferring the objects off the transport device after varnishing.

7. The printing apparatus of claim 3, wherein the print heads are ink jet print heads.

8. The printing apparatus of claim 7, further comprising an ink reservoir connected with the print heads for supplying inks to the print heads.

9. The printing apparatus of claim 1, further comprising a plurality of the digitally controlled print heads spaced apart along the carrier and respectively positioned and aimed at the blanket carrier, so that the plurality of print heads are operable to print a plurality of the blanket sections, as a blanket section to be printed by a respective print head passes the respective print head.

10. The printing apparatus of claim 9, further comprising a computer control connected with the print heads and with the blanket carrier for sensing the position of the blanket carrier and the blanket sections thereon and for selectively operating each print head to print the blanket section then passing the print head.

11. The printing apparatus of claim 9, wherein the print heads are ink jet print heads.

12. The printing apparatus of claim 11, further comprising an ink reservoir connected with the print heads for supplying inks to the print heads.

13. The printing apparatus of claim 9, further comprising a transfer device for transferring objects off the transport device after printing by contact with the blanket section.

14. The printing apparatus of claim 9, further comprising a varnishing device positioned after the contact between the objects being printed and the blanket carrier for varnishing the objects after printing.

15. The printing apparatus of claim 14, further comprising a transfer device for transferring the objects off the transport device after varnishing.

16. A digital printing method for objects, comprising:

moving a printing blanket having a plurality of blanket sections past a plurality of print heads so positioned and each adapted to print at least a single color in at least a single pattern, directing the print heads so as to enable all the print heads to provide non-contact printing of a blanket section then moving past the print head;

operating the print heads to provide at least the single color in at least the single pattern to at least selected ones of the blanket sections moving past the print heads;

moving each object to be printed into contact with one of the blanket sections sufficiently for enabling transfer of an ink image on the respective blanket section to the respective object then in contact with the blanket section; and

subsequently moving each object printed by a blanket section away from the blanket.

17. The printing method of claim 16, further comprising moving the printing blanket and the sections thereof along a circular pathway by rotating the blanket.

18. The printing method of claim 16, further comprising operating the print heads to control at least one of the color and the pattern printed by the print head between different printing operations by the print heads.

19. The printing method of claim 16, further comprising transferring objects for further processing after the printing thereof by the blanket section.

20. The printing method of claim 16, further comprising varnishing the objects after the printing thereof.